



Consumers  
Power  
Company

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June 4, 1981



Harold R Denton, Director  
Office of Nuclear Reactor Regulation  
US Nuclear Regulatory Commission  
Washington, DC 20555

MIDLAND PROJECT

DOCKET NO 50-329, 50-330

RESPONSE TO REQUEST FOR CONTROL ROOM CONSTRUCTION SCHEDULES

FILE: 0961 UFI: 00250/50000(E)/40\*40/42\*05 SERIAL: 12220

ENCLOSURE: PROJECTED DATES FOR MEETING NTOL CONTROL ROOM DESIGN CRITERIA

Attached as Enclosure 1 to this letter is Consumers Power Company's estimated schedule for completion of each of the 15 criteria for determining when a plant is ready for a NTOL control room design review. This information is being provided in response to your March 28, 1981 letter requesting information concerning the Midland control room construction schedule.

The criteria for a NTOL control room design review forwarded by your March 28, 1981 letter appear to be appropriate for applicants who will not have sufficient time to complete a control room assessment prior to receiving their operating license. Midland Unit 2 is scheduled to load fuel in July 1983, allowing sufficient time for a detailed control room assessment. As discussed in our response to Criteria 11, Consumers Power Company (CP Co) is currently conducting a detailed evaluation of the human factors aspects of the Midland control room design and operating procedures. Preliminary results and recommendations based on this evaluation are expected from our human factors consultant by August of this year. Following inhouse evaluation and disposition of the findings and recommendations, it is our intent to provide a final report describing the review methods, review results, and schedules for implementing necessary changes by January 1982. Areas where information is lacking due to the construction status of the plant (such as control room sound and light level measurements) will not be included in the January 1982 report but can be provided as necessary at a later date.

CP Co's control room design review program has been developed in accordance with established human factors review standards and takes into account the evolving NRC guidelines, including NUREG-0659. Therefore we expect to be able to reconcile our program with the NRC's final design review guidelines when NUREG-0700 is issued.

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CP Co is prepared and available to interact with your Staff to discuss the control room design review efforts currently under way on the Midland Plant. We would encourage the designated Human Factors Engineering Branch reviewer to come to Midland to review our control room mockup, to discuss our control room design review project, and to plan the exchange of information necessary to allow timely input of NRC's human factors review into the Midland SER.

*James W. Cook*

JWC/RMH/jm

CC RJCook, Midland Resident Inspector  
WJCloutier, P-24-511  
RMHamm, P-24-616  
BLHarshe, P-24-618  
RWHuston, P-24-624  
LSGibson, P-24-616  
DBMiller, Midland (3)

ENCLOSURE 1Projected Dates for Meeting NTOL Control Room Design Criteria

- Criteria 1 - Overall CR construction and checkout is 85 to 90 percent complete, except that installation and checkout of ESF system controls and displays are 100 percent complete.
- Response Overall control room construction and energization of the control panel controls and indicators is currently scheduled to be 85 to 90 percent complete by October 1, 1982. By this date, 100 percent of the Unit 2 ESF systems will be installed with the controls and indicators energized. One hundred percent of the ESF system controls and indicators for Unit 1 will be installed and energized by December 1, 1982.
- Criteria 2 - At least 80 percent of all systems, (including 100 percent of ESF systems) have been turned over to the operating staff.
- Response Eighty percent of all plant systems will be turned over to Consumers Power Company by August 1, 1982. By this date, essentially all of the Unit 2 ESF systems (with the exception of the penetration pressurization system) will be turned over to Consumers Power with the control and indications energized.
- Criteria 3 - Normal and emergency lighting systems are operational.
- Response Normal and emergency lighting systems in the control room are scheduled to be operational by April 1983.
- Criteria 4 - Air conditioning and ventilation system is operational.
- Response The normal control room air conditioning and ventilation system is scheduled to be operational by June 1982.
- Criteria 5 - Control boards and display panel installation is approximately 100 percent complete with essentially no holes in panels due to missing chassis or components and with power to illuminate controls and displays.
- Response Control board and display panel installation will be essentially 100 percent complete by August 1982. The Post-Accident Monitoring (PAM) panel, which is utilized as the backup Safety Parameter Display System (SPDS), will not be 100 percent complete until approximately November 1982 for Unit 2 and January 1983 for Unit 1.

- Criteria 6 - Emergency operating procedures (EOPs) are complete to permit a Human Factors evaluation of the EOP using trained and licensed operators.
- Response Midland currently has developed some emergency operating procedures and has available B&W-supplied operating specifications for the remaining emergency operating procedures. Further development of the emergency operating procedures has, however, been placed on hold pending the results of our control room design review and of the Midland evaluation as part of the Abnormal Transient Operating Guidelines (ATOG) program. This program is developing guidelines from which the final plant emergency procedures will be developed. Preliminary emergency operating procedures based on the ATOG program will be available by August 1982. Final development of the emergency operating procedures is scheduled to be complete by January 1983.
- Criteria 7 - Applicant should have available as a minimum, three (3) licensed operators to assist NRC during the CRDR.
- Response The first Midland operators are not expected to be fully licensed until March 1983. Plant operators who are certified to sit for a license will, however, be available by October 1982. Plant operators who have been licensed on other plants and are knowledgeable of the Midland units are currently available.
- Criteria 8 - All annunciators should be operational to permit evaluation of and sequential operation, readability of alarm windows, and measurement of all individual alarm sound levels.
- Response Control room annunciators are scheduled to be operational by March 1982.
- Criteria 9 - Remote shutdown panel should be 80 to 90 percent complete and available for Human Factors review.
- Response The auxiliary shutdown panel will be approximately 80 percent complete when approximately 80 percent of the plant systems are turned over to Consumers Power Company. This is currently scheduled for August 1982 as identified in the response to Criteria 2.
- Criteria 10 - Incore thermocouple displays and subcooling monitor displays should be available for NRC review in the control room.
- Response Incore thermocouple and subcooling monitor displays will be available for review by June 1982.

Criteria 11 - Applicant's preliminary control room assessment must be submitted to the NRC at least one month prior to our visit.

Response In February of this year, Consumers Power Company retained Eclectech Associates Inc of North Stonington, CN to perform a detailed human factors evaluation of the Midland control room. This evaluation is being performed on a full scale static mockup of the Unit 2 and common control room panels. Features of the evaluation include performance of walkthroughs of normal and emergency operating procedures (based on procedures actually written or on B&W-supplied operating specifications) and a comparison of control board component characteristics against accepted human factors standards. In addition, the Eclectech study is evaluating the use of the plant computer colorgraphic CRT capabilities as a tool for improving the presentation of plant data to the operator. Consumers Power expects to have preliminary results of this evaluation by August of this year. A final report describing the review methods, review results, and schedule for implementing any necessary human factors related changes to the Midland Plant is scheduled to be submitted by January 1982.

In addition to the human factors evaluation of the control room, Consumers Power Company is currently procuring plant specific simulators for use in training Midland and Palisades plant operators. These simulators, scheduled to be operational in January 1983, will aid in the human factors considerations in training in that operators will be trained on simulators nearly identical to the units they normally operate.

Criteria 12 - Control Room layout drawings included with Item 11 above.

Response Control room layout drawings will be provided as part of the report discussed in Criteria 11 above. These drawings are currently included in the Midland FSAR Supplemental Reference Drawings.

Criteria 13 - Emergency operating procedures (EOPs) must be submitted to the NRC (PTRB) at least six (6) weeks prior to our visit. This schedule must be met to permit joint HFEB/PTRB review of EOPs. Failure to meet this criteria could delay visits and SER inputs.

Response As discussed in response to Criteria 6 above, the emergency operating procedures based on the B&W ATOG program are scheduled to be completed by January 1983. In addition, the results of our human factors evaluation will have been incorporated.

Criteria 14 - Process computer and all peripherals are operational and available for Human Factor Review.

- Response           The process computer and peripherals available in the control room will be operational by June 1982.
- Criteria 15 -   Operator workspace and environment are similar to what will be when operating and can be Human Factor reviewed.
- Response           Operator workspace and environment in the control room will be similar to what it would be during normal plant operation by August 1982.